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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,079	06/25/2003	Whalid Khairy Mohamed Ahmed	17977	4260

26794 7590 11/04/2005

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EXAMINER

HANNON, CHRISTIAN A

ART UNIT

PAPER NUMBER

2685

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/606,079

Applicant(s)

AHMED, WHALID KHAIRY  
MOHAMED

Examiner

Christian A. Hannon

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 June 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date May 19, 2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-20, 28-36 & 40-42 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Camp, Jr. et al US 6,194,963 (herein Camp).

Regarding claim 1, Camp teaches a method for electromagnetic processing of an input wave comprising the steps of receiving a modified signal derived from two or more signals that represent said input wave when combined and regulating said modified signal using at least one analog signal produced at Item 40 of Figure 1, containing a characteristic, considered to be the magnitude of the I & Q signal, of said two or more signals (Column 3, Lines 24-34).

In regards to claim 2, Camp teaches the method of claim 1, in addition to having two or more signals in quadrature with each other (Column 3, Lines 24-34).

Regarding claim 3, Camp teaches the method of claim 1, in addition to having a characteristic used to regulate said modified signal be magnitude (Column 3, Lines 40-47).

In regards to claim 4, Camp teaches the method of claim 1, further comprising the step of generating an output signal from said regulation of said modified signal (Figure 1, Item 28).

Regarding claim 5, Camp teaches the method of claim 1, further comprising the step of regulating said modified signal being performed using a plurality of segments (Column 3, Lines 48-56).

In regards to claim 6, Camp teaches the method of claim 5, wherein one or more of said segments is independently controlled as a power amplifier by a portion of said two or more signals that represent said input wave to contribute power to an output signal (Figure 1, Items 30, 38, 26 and 28; Column 3, Lines 48-67; Column 4, Lines 1-22)

Regarding claim 7, Camp teaches the method of claim 6, further comprising the step of generating an output signal by combining power outputted from one or more segments (Column 3, Lines 62-66).

In regards to claim 8, Camp teaches the method of claim 7, wherein said step of generating an output signal by combining power is accomplished using one or more selected from the group consisting of power transformers, quarter-wave transmission lines, discrete LC components, and a Pi-network (Figure 1, Item 40). It is further noted that low pass filters are inherently designed from LC components and pi networks.

Regarding claim 9, Camp teaches the method of claim 5, wherein one or more of said segments is independently controlled as a current source by a portion of said two or more signals that represent said input wave to contribute current to an output signal (Column 3, Lines 62-66).

In regards to claim 10, Camp teaches the method of claim 1, wherein said received modified signal contains only one of said two or more signals used to derive said modified signal (Column 3, Lines 40-47). It is further noted that the one of said two

or more signals is being interpreted as the amplitude of the signal selected from amplitude and phase.

Regarding claim 11, Camp teaches the method of claim 1, wherein said modified signal is derived from a sign characteristic of at least one of said two or more signals that represent said input wave when combined (Column 3, Lines 40-47). It is noted that the characteristic of amplitude inherently has an associated sign of either positive or negative.

In regards to claim 12, Camp teaches a method of claim 1, wherein said modified signal is a carrier wave modulated by a characteristic of at least one of said two or more signals that represent said input wave when combined (Column 4, Lines 1-5).

Regarding claim 13, Camp teaches the method of claim 1, further comprising the step of generating said modified signal (Figure 1, Item 14).

In regards to claim 14, Camp teaches the method of claim 13, wherein said step of generating said modified signal comprises phase shifting a carrier wave to generate a phase shifted carrier wave, mixing a characteristic of on of said two or more signals that represent said input wave when combined with said carrier wave and mixing a characteristic of another of said two or more signals that represent said input wave when combined with said phase shifted carrier wave (Column 3, Lines 48-67; Column 4, Lines 1-22).

Regarding claim 15, Camp teaches the method of claim 14, wherein said carrier wave and said phase shifted carrier wave have a relative phase difference of 90 degrees (Figure 1, Item 16 and signal before item 26).

In regards to claim 16, Camp teaches the method of claim 1 further comprising the step of generating said two or more signals that represent said input wave when combined (Figure 1, Item 20).

Regarding claim 17, Camp teaches the method as in claim 16, further comprising the step of processing one or more of said two or more signals that represent said input wave when combined (Figure 1, Item 22).

In regards to claim 18, Camp teaches the method of claim 17, wherein said step of processing comprises one or more selected from the group consisting of performing correction of an amplitude characteristic of a carrier wave used in said derivation of said modified signal, correction of a phase characteristic of a carrier wave used in said derivation of said modified signal, and filtering of one or more of said two or more signals that represent said input wave when combined (Column 3, Lines 48-56).

Regarding claim 19 Camp teaches the method of claim 1, in addition to having said electromagnetic processing of said input wave comprise RF modulation (Column 3, Lines 32-34).

In regards to claim 20, Camp teaches the method of claim 1, wherein said step of regulating said modified signal comprises regulating said modified signal using an analog control signal from one of said two or more signals that represent said input wave when combined to generate at least one output signal component (Figure 1, Item 16), regulating said modified signal using an analog control signal from another of said two or more signals that represent said input wave when combined to generate at least one other output signal component (Figure 1, Item 16) and combining said at least one

output signal component with said at least one other output signal component to generate an output signal (Figure 1, Item 26).

Regarding claim 28, Camp teaches an apparatus for electromagnetic processing of an input wave comprising an amplifier having at least one amplifying segment for receiving a modified signal derived from two or more signals that represent said input wave when combined (Figure 1, Item 26) and a control circuit for regulating at least one said modified signal across said amplifying segment using an analog signal containing a characteristic of said two or more signals (Figure 1, Item 26, stemming from item 40).

In regards to claim 29, Camp teaches the apparatus of claim 28, wherein said two or more signals are in quadrature with each other (Figure 1, Item 20  $\cos(\phi(t))$  and  $\sin(\phi(t))$ ).

Regarding claim 30, Camp teaches the apparatus of claim 28, wherein said characteristic used to regulate said modified signal is magnitude (Figure 1, Item 30).

In regards to claim 31, Camp teaches the apparatus of claim 28, further comprising an output circuit for generating an output signal from said regulation of said modified signal (Figure 1, Item 28).

Regarding claim 32, Camp teaches the apparatus of claim 28, wherein said amplifier comprises a plurality of segments. It is inherent that an amplifier is made up of discrete components that, since no definition of the term segment is provided in the claim, read on the claim.

In regards to claim 33, Camp teaches the apparatus of claim 32, wherein one or more of said segments comprise a power amplifier (Figure 1, Item 26).

Regarding claim 34, Camp teaches the apparatus of claim 33, further comprising a combining circuit for combining an output from one or more of said segments, wherein said combining circuit comprises one or more selected from the group consisting of power transformers, quarter-wave transmission lines, discrete LC components, and a Pi-network (Figure 1, Item 40). It is further noted that low pass filters are inherently designed from LC components and pi networks.

In regards to claim 35, Camp teaches the apparatus of claim 32, wherein one or more of said segments is a current source that contributes current to an output signal (Column 3, Lines 62-66).

Regarding claim 36, Camp teaches the apparatus of claim 28, wherein said received modified signal contains only one of said two or more signals used to derive said modified signal (Figure 1, Item 30), here the only one signal is signal magnitude.

In regards to claim 40, Camp teaches the apparatus of claim 28, further comprising a signal generator for generating said two or more signals that represent said input wave when combined (Figure 1, Item 14).

Regarding claim 41, Camp teaches an apparatus of claim 40, further comprising a signal processor for processing one or more of said two or more signals that represent said input wave when combined (Figure 1, Items 30 & 34).

In regards to claim 42, Camp teaches an apparatus of claim 41, wherein said signal processor is programmed to do one or more selected from the group consisting of performing correction of an amplitude characteristic of a carrier wave used in said derivation of said modified signal, and filtering of one or more of said two or more



signals that represent said input wave when combined. Correction table item 34 of Figure 1, corrects an amplitude characteristic of a carrier wave used in said derivation of said modified signal.

### ***Double Patenting***

3. Claims 1-13, 19, 21-25, 28-30, 32, 35, 37-42 & 43-49 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13, 19, 20-24, 27-30, 33, 36-38 & 40-46 of U.S. Patent No. 6,870,435 (herein '435). Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Regarding claims 1-13 & 19 of the present application, these claims read nearly verbatim to the corresponding claims 1-13 & 19, respectively of '435 with the modification of '435's digital signal being analog in the present application.

In regards to claims 21-25 of the present application, these claims read nearly verbatim to the corresponding claims 20-24, respectively of '435 with the modification of '435's terminology of 'combining' with the term modulation or modulating in the present application, which are being interpreted as analogous by the examiner.

Regarding claims 28-30, 32, 35, 37-42 of the present application, these claims read nearly verbatim to the corresponding claims 27-30, 33 & 36-38 of '435, wherein these claims are more specific yet still read on the broader claims of the present application.

In regards to claims 43-49, of the present application, these claims read nearly verbatim to claims 40-46, respectively of '435 with the modification of the 'characteristic' of the present application is a phase shift.

***Allowable Subject Matter***

4. Claims 26-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 26 & 27, Camp and all other pertinent cited prior art fail to teach the additional limitation of segmented power amplification in claim 26 and segmented current source in claim 27.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Holden et al (US 6,411,655) disclose systems and methods for converting a stream of complex numbers into an amplitude and phase-modulated radio power signal.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian A. Hannon whose telephone number is (571) 272-7385. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 4:30 PM.

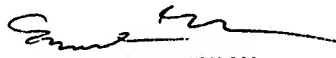
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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October 21, 2005



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